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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,244	09/09/2003	Narutoshi Fukuzawa	242334US0	4051

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ALEXANDRIA, VA 22314

EXAMINER

MUHAMMED, ABDUKADER S

ART UNIT	PAPER NUMBER
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2627

NOTIFICATION DATE	DELIVERY MODE
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11/26/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/657,244	Applicant(s) FUKUZAWA, NARUTOSHI	
	Examiner Abdukader Muhammed	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 09/04/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/04/2007 (amendment after final) and 10/12/2007 (IDS) has been entered.

The amendment filed on September 04, 2007 has been considered. Claims 1-3 and 5-12 are pending in the application.

2. Applicant's arguments with respect to claims 1-3 and 5-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5, 7-9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasada et al. (US 6,683,188 B1) in view of Sabi et al. (EP 1,103,962 A2).

Regarding Claims 1-3, Kasada et al. teach an optical recording medium comprising a supporting substrate (substrate; see column 1, lines 33-35); a recording layer on the supporting substrate, the recording layer containing an organic compound as a major component; and a

light-transmitting layer (a protective layer made of an ultraviolet ray hardening; see column 1, lines 33-35) on the recording layer. See column 1, lines 30-38. Note that the recording medium absorbs light with a wavelength of 450nm or lower (more specifically 350-450 nm; see column 4, lines 64-66) for recording and reproducing information, wherein the organic compound in the recording layer includes a monomethine cyanine dye (see column 2, lines 13-32) that has the minimum value n_{\min} of its refractive index n (real part of the complex refractive index) within the range of 370 to 425 nm and has a refractive index n of 1.2 or lower and an extinction coefficient k (imaginary part of the complex refractive index) of 0.15 or above with respect to the wavelength of the recording/reproducing laser light, and the organic compound, when absorbing the laser light, melts or degrades to bring about a change/increase in the refractive index, thereby effecting recording of the information. Note that once monomethine cyanine is used for the recording layer its characteristics are inherent, see for example figure 1.

Kasada et al. further teach that the monomethine cyanine dye contains a monomethine group with two nitrogen-containing heterocyclic rings positioned on ends of the monomethine group (see column 2, lines 13-20 also formulas 1-8 on column 2, line 45 through column 3, line 35), said two nitrogen-containing heterocyclic rings being selected from the group consisting of a combination of indolenine and indolenine (see column 14 line 65 and note, *as shown in column 14, lines 60-62*, that the two cyclic rings can be either the same or different with given list of possible rings), a combination of benzothiazole and benzothiazole (see column 15 line 3 and again note, *as shown in column 14, lines 60-62*, that the two cyclic rings can be either the same or different with given list of possible rings), and a combination of benzothiazole (see column 15 line 3) and quinoline (see column 15 line 9 and also note, *as shown in column 14, lines 60-62*,

that the two cyclic rings can be either the same or different with given list of possible rings).

Kasada et al. disclose a long list of organic dye compounds which are usable in combination with the monomethine cyanine dyes in column 14, line 50 through column 15, line 25.

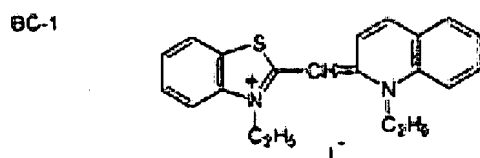
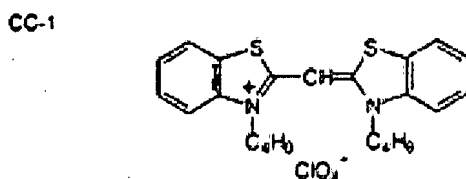
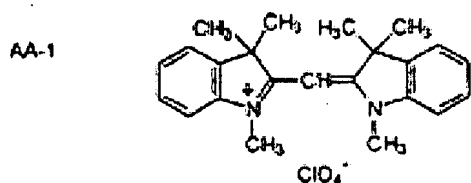
Kasada et al. differ from the claimed invention in that they do not specifically show the dielectric layer being disposed on the recording layer.

Sabi et al. on the other hand teach a recording medium with a dielectric layer 5 formed on the recording layer 4 (see column 4, lines 24-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a dielectric layer on top of the recording layer in the system of Kasada et al. since Sabi et al. teach that having the dielectric layer will protect the recording layer and also it prevents dissolving of the organic material or dissolving of a material constituting an adjacent layer into the recording layer (see column 3, lines 27-34).

Regarding Claim 5, as applied to claim 1 above and Kasada et al. further teach that the monomethine cyanine dye contains a monomethine group with two nitrogen-containing heterocyclic rings positioned on ends of the monomethine group, the two nitrogen-containing heterocyclic rings being identical to one another (with same or different cyclic cores; see column 14, lines 58-63). Note that Kasada et al. have many substitutes for the heterocyclic rings and in different ways.

Regarding Claims 7-9, claims 7-9 are the combinations of claims 1-3 and 5 in a method claim format with identical limitations. Therefore method claims 7-9 correspond to apparatus claims 1-3 and 5 and are rejected for the same reasons of obviousness as used above.

Regarding claims 11 and 12, as applied to claims 1 and 7 (respectively) above, Kasada et al. further teach that at least one organic compound in the recording layer includes at least one of the following monomethine cyanine dyes:



Kasada et al. disclose the following:

the monomethine cyanine dye contains a monomethine group with two nitrogen-containing heterocyclic rings positioned on ends of the monomethine group (see column 2, lines 13-20 also page 2, line 45 through page 3, line 35), said two nitrogen-containing heterocyclic rings being:

with respect to formula AA-1: **indolenine and indolenine** (see column 14 line 65 and note, as shown in column 14, lines 60-62, that the two cyclic rings can be either the same or different with given list of possible rings) with anion of chloric acid (see column 4, lines 38-42),

with respect to formula CC-1: **benzothiazole and benzothiazole** (see column 15 line 3 and again note, *as shown in column 14, lines 60-62*, that the two cyclic rings can be either the same or different with given list of possible rings) with anion of chloric acid (see column 4, lines 38-42),

with respect to formula BC-1: **benzothiazole** (see column 15 line 3) and **quinoline** (see column 15 line 9 and also note, *as shown in column 14, lines 60-62*, that the two cyclic rings can be either the same or different with given list of possible rings) with anion of iodic acid (see column 4, lines 38-42).

5. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasada et al. (US 6,683,188 B1) in view of Sabi et al. (EP 1,103,962 A2) as applied to claims 1 and 7, above, further in view of Yanagisawa et al. (US 5,326,679).

Regarding Claims 6 and 10, Kasada et al. and Sabi et al. teach the limitations of claim 1 and 7 for the reasons discussed above. The combination of Kasada et al. and Sabi et al. differ from the claimed invention in that the recording layer does not contain quencher.

Yanagisawa et al. teach the use quencher in a recording medium for cyanine dyes (see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used quencher in the system of Kasada et al. since Yanagisawa et al. teach the use of quencher for preventing photo deterioration of cyanine dyes (see abstract lines 11-14).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdukader Muhammed whose telephone number is (571) 270-

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1226. The examiner can normally be reached on Monday-Thursday 8:00-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (571) 272-7023. Customer Service can be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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19 November 2007


GAUTAM R. PATEL
PRIMARY PATENT EXAMINER